IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Applicant(s): Y. Ye et al.
Docket No.: SOM920030004US1
Serial No.: 10/699,020
Filing Date: October 31, 2003
Group: 3623
Examiner: Justin Pats

Title: Methods and Apparatus for Decision Support Activation and Management in Product Life Cycle Management

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APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants (hereinafter referred to as "Appellants") hereby appeal the final rejection, dated February 9, 2009, of claims 1-7, 9-12 and 15-19 of the above-identified application.

REAL PARTY IN INTEREST

The present application is assigned to International Business Machines Corporation. The assignee, International Business Machines Corporation, is the real party in interest.

RELATED APPEALS AND INTERFERENCES

There are no known related appeals or interferences.

STATUS OF CLAIMS

The present application was filed on October 31, 2003 with claims 1-20. Claims 8, 13, 14 and 20 have been canceled without prejudice in prior amendments. Claims 1-7, 9-12 and 15-19 are pending with claims 1, 18 and 19 the pending independent claims.

Claims 1-7, 9-12 and 15-19 are finally rejected under §103(a). Claims 1-7, 9-12 and 15-19 are appealed.

STATUS OF AMENDMENTS

There have been no amendments filed subsequent to the final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to a computer-implemented method of managing at least one collaborative process performed in accordance with a first entity and at least a second entity. The method includes a step of a computer obtaining information associated with the at least one collaborative process used to design and develop a given product. The method also includes a step of, based on at least a portion of the obtained information, the computer dynamically maintaining an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process.

The context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks. The context pyramid structure comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process.

An illustrative embodiment within the scope of independent claim 1 includes a computer-implemented method of managing at least one collaborative process performed in accordance with a first entity (e.g., Collaborator 1 identified as 102-1 in FIG. 1) and at least a second entity (e.g., Collaborator 2 identified as 102-2 in FIG. 1); see, e.g., the specification at page 7, lines 3-15. The method includes a step of a computer obtaining information associated with the at least one

collaborative process used to design and develop a given product; see. e.g., the specification at page 7, line 16, to page 8, line 4, with reference to collaborative directories 104 and 108 shown in FIG. 1. The method also includes a step of, based on at least a portion of the obtained information, the computer dynamically maintaining an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process; see, e.g., the specification at page 9, lines 1-4, with reference to FIG. 3.

The context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks; see, e.g., the specification at page 8, lines 5-18, with reference to FIG. 2. The context pyramid structure comprises results of a time offset calculation (see, e.g., the specification at page 19, lines 12-17, with reference to FIG. 19C; see also the specification at page 13, lines 12-15, with reference to FIG. 8), a checkpoint calculation (see, e.g., the specification at page 19, lines 18-19, with reference to FIG. 19D; see also the specification at page 13, lines 16-20, with reference to FIG. 8) and a potential energy level calculation (see, e.g., the specification at page 19, lines 20-23, with reference to FIG. 19E; see also the specification at page 15, line 24, to page 16, line 3, with reference to FIG. 14) for the one or more global and local tasks involved in the collaborative process.

Claim 18 is directed to an apparatus for managing at least one collaborative process performed in accordance with a first entity and at least a second entity. The apparatus comprises a memory and at least one processor coupled to the memory. The at least one processor is operative to obtain information associated with the at least one collaborative process used to design and develop a given product. The at least one processor is further operative to, based on at least a portion of the obtained information, dynamically maintain an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process.

The context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks. The context pyramid structure comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation

for the one or more global and local tasks involved in the collaborative process.

An illustrative embodiment within the scope of claim 18 includes an apparatus (e.g., 2000 in FIG. 20) for managing at least one collaborative process performed in accordance with a first entity (e.g., Collaborator 1 identified as 102-1 in FIG. 1) and at least a second entity (e.g., Collaborator 2 identified as 102-2 in FIG. 1); see, e.g., the specification at page 7, lines 3-15. As described in the specification at, for example, page 19, line 24, to page 20, line 21, the apparatus comprises a memory (e.g., 2004 in FIG. 20) and at least one processor (e.g., 2002 in FIG. 20) coupled to the memory. The at least one processor is operative to obtain information associated with the at least one collaborative process used to design and develop a given product; see. e.g., the specification at page 7, line 16, to page 8, line 4, with reference to collaborative directories 104 and 108 shown in FIG. 1. The at least one processor is further operative to, based on at least a portion of the obtained information, dynamically maintain an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process; see, e.g., the specification at page 9, lines 1-4, with reference to FIG. 3.

The context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks; see, e.g., the specification at page 8, lines 5-18, with reference to FIG. 2. The context pyramid structure comprises results of a time offset calculation (see, e.g., the specification at page 19, lines 12-17, with reference to FIG. 19C; see also the specification at page 13, lines 12-15, with reference to FIG. 8), a checkpoint calculation (see, e.g., the specification at page 19, lines 18-19, with reference to FIG. 19D; see also the specification at page 13, lines 16-20, with reference to FIG. 8) and a potential energy level calculation (see, e.g., the specification at page 19, lines 20-23, with reference to FIG. 19E; see also the specification at page 15, line 24, to page 16, line 3, with reference to FIG. 14) for the one or more global and local tasks involved in the collaborative process..

Independent claim 19 is directed to an article of manufacture for managing at least one collaborative process performed in accordance with a first entity and at least a second entity. The article of manufacture comprises a computer readable storage medium containing one or more

programs which when executed implement steps. These steps include obtaining information associated with the at least one collaborative process used to design and develop a given product. These steps also include a step of, based on at least a portion of the obtained information, dynamically maintaining an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process.

The context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks. The context pyramid structure comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process.

An illustrative embodiment within the scope of independent claim 19 includes an article of manufacture (e.g., memory 2004 in FIG. 20) for managing at least one collaborative process performed in accordance with a first entity (e.g., Collaborator 1 identified as 102-1 in FIG. 1) and at least a second entity (e.g., Collaborator 2 identified as 102-2 in FIG. 1); see, e.g., the specification at page 7, lines 3-15. As described in the specification at, for example, page 20, lines 19-21, and page 21, lines 4-7, the article of manufacture comprises a computer readable storage medium containing one or more programs which when executed implement steps. These steps include obtaining information associated with the at least one collaborative process used to design and develop a given product; see. e.g., the specification at page 7, line 16, to page 8, line 4, with reference to collaborative directories 104 and 108 shown in FIG. 1. These steps also include a step of, based on at least a portion of the obtained information, the computer dynamically maintaining an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process; see, e.g., the specification at page 9, lines 1-4, with reference to FIG. 3.

The context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks; see, e.g., the specification at page 8, lines 5-18, with reference to FIG. 2. The context pyramid structure comprises results of a time offset calculation (see, e.g., the specification at page 19, lines 12-17, with reference to FIG. 19C; see also the

specification at page 13, lines 12-15, with reference to FIG. 8), a checkpoint calculation (see, e.g., the specification at page 19, lines 18-19, with reference to FIG. 19D; see also the specification at page 13, lines 16-20, with reference to FIG. 8) and a potential energy level calculation (see, e.g., the specification at page 19, lines 20-23, with reference to FIG. 19E; see also the specification at page 15, line 24, to page 16, line 3, with reference to FIG. 14) for the one or more global and local tasks involved in the collaborative process.

Illustrative embodiments of the present invention provide numerous advantages over conventional techniques. For example, as described in the specification at page 21, line 8, to page 22, line 19, illustrative embodiments of the claimed invention provide automatic adjustment of notification and alert activities based on a frustration energy calculation, as well as frustration energy models which capture various levels of dependency urgency management needs for project execution check points.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-7, 9-12 and 15-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 7,184,940 (hereinafter "Matheson") in view of a public use of Microsoft Project 2002, as evidenced by Pyron, *Special Edition Using Microsoft Project 2002*, Que Publishing, August 5, 2002, pp. 1-47 (hereinafter "Project").

ARGUMENT

Rejection of claims 1-7, 9-12 and 15-19 under §103(a) over Matheson in view of Project

Claims 1-7, 9-12 and 15-19

With regard to the §103 rejection of claims 1-7, 9-12 and 15-19, Appellants assert that the cited combination of Matheson and Project fails to teach or suggest each and every limitation of the claimed invention.

For example, independent claim 1 recites a computer-implemented method of managing at least one collaborative process performed in accordance with a first entity and at least a second entity, the method comprising the steps of: a computer obtaining information associated with the at least one collaborative process used to design and develop a given product; and based on at least a portion of the obtained information, the computer dynamically maintaining an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process; wherein the context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks, and comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process. Independent claims 18 and 19 recite similar limitations.

While Matheson discloses a collaborative session recording model and Project discloses a project schedule management tool, neither reference alone or in combination discloses a context pyramid structure that provides a representation of the status of the collaborative process including one or more global and local tasks, and comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process, as recited in claim 1 and the other independent claims.

The Office Action again points to Figs. 3-5 of Matheson with regard to a "pyramid structure," however, it is clear that none of the structures shown in Matheson are pyramid structures, no less context pyramid structures. Furthermore, no where do Matheson or Project disclose any type of representation that comprises the status of the collaborative process including one or more global and local tasks, and comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process, as recited in claim 1 and the other independent claims.

As noted above, claim 1 includes a limitation directed to a representation that comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process. In the Office Action

at pages 10-11, the Examiner contends "that the late indicator on Fig. 15.1 of Project derives from a calculation by the system revealing that the progress of a task has missed a deadline and is late or overdue. This indication imparts a sense of urgency on the task doers to complete the task as soon as possible and thus meets Applicant's potential energy limitation."

Appellants note it is axiomatic that "a patentee is free to act as his own lexicographer, and may set forth any special definitions of the claim terms in the patent specification or file history, either expressly or impliedly." *Schoenhaus v. Genesco, Inc.*, 440 F.3d 1354, 1358, 78 USPQ2d 1252, 1255 (Fed. Cir. 2006). More particularly, where a definition is provided by the applicant for a term, either explicitly or by implication (i.e., according to the usage of the term in the context in the specification), that definition will control interpretation of the term as it is used in the claim. See *Vitronics Corp. v. Conceptronic Inc.*, 90 F.3d 1576, 1583, 39 USPQ2d 1573, 1577 (Fed. Cir. 1996); see generally *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) (*en banc*).

Accordingly, Appellants' reliance on the specification's implicit definition of "potential energy" is not an impermissible attempt to read limitations from the specification into a claim, but rather is a proper interpretation of the claim in light of the specification. See, e.g., *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1572, 7 USPQ2d 1057, 1065 (Fed. Cir. 1988) (If "words that are used in the claims [are] defined in the specification," these definitions from the specification "must be imported into the claims to give meaning to disputed terms.")

The specification at page 15, lines 18-22, states, with added emphasis, that:

> When a real check point passes the absolute timeline, it gives other check points some urgency because others have to shorten their planned time so as to meet the absolute check points. This urgency is modeled as a potential energy which may be displayed at the dashboard so that the users can get a sense on whether they should speed-up to meet the absolute check point.

Thus, potential energy refers to an urgency associated with other check points after a check point passes a deadline. For example, a real check point which has already passed its absolute check point cannot meet its absolute check point regardless of how much users speed up.

Appellants respectfully submit that, even if one accepts the Examiner's characterization that the late indicator on Fig. 15.1 of Project imparts a sense of urgency on the task doers to complete a task indicated as late as soon as possible, such disclosure would still fail to teach or suggest an indication of potential energy as recited in claim 1 and described in the specification. Rather, the late indicator only reveals an increased urgency associated with the late task itself, rather than with other tasks. For example, with reference to Fig. 15.1 of Project, there is no indication that the late status of the task labeled "Create legal documents" may create an increased urgency, or may otherwise impact the performance, for the task labeled "Financing closed."

In view of the above, Appellants respectfully assert that independent claim 1 is patentable over Matheson and Project.

Independent claims 18 and 19 recite similar limitations, and are thus believed to be similarly patentable.

Dependent claims 2-7, 9-12 and 15-17 are patentable at least by virtue of their dependency from independent claim 1. Moreover, these dependent claims recite patentable subject matter in their own right.

In view of the above, Appellants believe that claims 1-7, 9-12 and 15-19 are in condition for allowance, and respectfully request reversal of the §103(a) rejection.

Respectfully submitted,

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David E. Shifren
Attorney for Applicant(s)
Reg. No. 59,329
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560
(516) 759-2641

CLAIMS APPENDIX

1. A computer-implemented method of managing at least one collaborative process performed in accordance with a first entity and at least a second entity, the method comprising the steps of:

a computer obtaining information associated with the at least one collaborative process used to design and develop a given product; and

based on at least a portion of the obtained information, the computer dynamically maintaining an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process;

wherein the context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks, and comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process.

2. The method of claim 1, further comprising the step of incorporating annotated business data into the information structure.

3. The method of claim 1, further comprising the step of incorporating annotated design data into the information structure.

4. The method of claim 1, further comprising the step of controlling data flow associated with the at least one collaborative process based on the information structure.

5. The method of claim 1, further comprising the step of fetching one or more design data features for at least one of monitoring and tracking the at least one collaborative process.

6. The method of claim 1, wherein the at least one collaborative process is a business process.

7. The method of claim 1, wherein the at least one collaborative process is an engineering design process.

8. (Canceled).

9. The method of claim 1, wherein the information structure is multi-dimensional.

10. The method of claim 1, wherein the information structure is multi-resolution.

11. The method of claim 1, wherein the obtained information comprises annotated data.

12. The method of claim 1, wherein the obtained information comprises user input.

13. (Canceled).

14. (Canceled).

15. The method of claim 1, further comprising the step of analyzing at least one of the obtained information and the information structure.

16. The method of claim 15, further comprising the step of generating one or more action representations based on the analyzing step.

17. The method of claim 16, wherein the analyzing step is rule-based.

18. Apparatus for managing at least one collaborative process performed in accordance with a first entity and at least a second entity, the apparatus comprising:

a memory; and

at least one processor coupled to the memory and operative to: (i) obtain information associated with the at least one collaborative process used to design and develop a given product; and (ii) based on at least a portion of the obtained information, dynamically maintain an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process, wherein the context pyramid structure provides a representation of the status

of the collaborative process including one or more global and local tasks, and comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process.

19. An article of manufacture for managing at least one collaborative process performed in accordance with a first entity and at least a second entity, comprising a computer readable storage medium containing one or more programs which when executed implement the steps of:

obtaining information associated with the at least one collaborative process used to design and develop a given product; and

based on at least a portion of the obtained information, dynamically maintaining an information structure in the form of a context pyramid structure representative of the collaborative process so as to assist at least one of the first entity and the second entity in managing at least a portion of the collaborative process;

wherein the context pyramid structure provides a representation of the status of the collaborative process including one or more global and local tasks, and comprises results of a time offset calculation, a checkpoint calculation and a potential energy level calculation for the one or more global and local tasks involved in the collaborative process.

20. (Canceled).

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.